

4.3.4 SOCIAL AND ECONOMIC FACTORS

Potential social and economic impacts are presented for each alternative under the following categories: population; housing; employment; personal income; spending and economic characteristics; and, public services.

Direct, indirect, and induced social and economic impacts are expected to occur under each of the alternatives. **Direct impacts** include direct payments for goods and services in connection with the proposed development of the resort. **Indirect impacts** result from expenditures by suppliers for items such as machinery, services and materials. Induced impacts generally occur in the trade and services sectors of the economy through spending by households affected by the project. Impacts from indirect and induced spending are often referred to as “ripple” or “multiplier” effects, as increased employment income is spread through the economy.

The development and resulting resort business operations proposed under the Action Alternatives are expected to generate economic growth at the resort community, as well as spin-off socioeconomic effects within other communities of Pierce and King Counties, particularly the towns of Greenwater, Enumclaw, Buckley, and Bonney Lake.

Crystal Mountain Community

The developments proposed in each alternative would take place at the Crystal Mountain community. Additional visitation generated by improvements in Alternatives 2 through 6 would occur at the ski area in both summer and winter, and the majority of the spending generated by resort visitors would take place at the resort itself. For these reasons, the Crystal Mountain community would experience the most significant effects from the proposed actions.

In Alternatives 2 through 6, the resort community population would increase during the operating seasons, due to the development of additional employee housing units at the resort. The number of employment opportunities in the community would increase in both summer and winter. The number of visitors in the community and the spending generated by those visitors would increase. With additional lodging and guest amenities, the Crystal Mountain community would take on a character more typical of a weekend destination resort, as opposed to that of a day ski area, which would continue under Alternative 1.

Pierce County

Other communities in Pierce County would experience social and economic impacts from the development proposed at Crystal Mountain under Alternatives 2 through 6. Some of these effects would be concentrated and localized, while others would be more diluted and widespread. The main county-level social impact would be the development of a local/regional overnight ski destination located within close proximity to the major population centers of Seattle and Tacoma. Communities located along the major access routes to Crystal Mountain, such as Greenwater, Buckley, and Bonney Lake, would see increased traffic flows and business activity, and could possibly experience some effects on population and housing. Resort spending for development materials, supplies, and services would likely affect many Pierce County communities, businesses, and individuals in small ways. Increased visitor spending away from the resort would

also have ripple effects throughout the county, particularly in supporting a number of unrelated jobs.

King County

Measurable economic impacts on the county level in King County would be minimal, as the bulk of the spending associated with resort development and operations would transpire within Pierce County (and out of state with lift manufacturers). Social impacts on the county level would be negligible under Alternative 1. Under Alternatives 2 through 6, the main county-level social impact would be the emergence of a local/regional overnight ski destination closer to home, generally reducing travel time for overnight skiers. Most of the impacts for King County would likely be concentrated in the community of Enumclaw. Some impacts to Enumclaw's population, housing, and employment would be expected as a result of proposed development in Alternatives 2 through 6.

4.3.4.1 Environmental Justice

The Action Alternatives may have disproportionate effects on the cultural practices and subsistence lifestyles of the MIT. A detailed discussion of potential impacts to MIT, TCHRs, and treaty resources can be found in Section 4.3.1 – Heritage Resources and Reserved Indian Rights. Included in the discussion are potential impacts to hunting, gathering, fishing and spiritual bathing practices, and places culturally important to the MIT. The Forest Service elicited the views of the MIT in developing the mitigation strategies identified in Table 2.4-3; these include measures to ensure the minimize to the extent practicable, effects on elk and fish populations and native vegetation, and the exercise of treaty rights in the SUP area.

None of the Alternatives would have a disproportionately high and adverse human health and/or environmental effect on other minorities or low-income populations. No adverse effects to human health have been identified under any of the Alternatives (see Sections 4.2.1 through 4.2.8). Accordingly, there would be no disproportionate human health effects to other minority and low-income populations. There would be no direct adverse environmental effects on other minority and low-income populations associated with any of the Action Alternatives, as no other minority or low-income populations live within the Crystal Mountain SUP or the Upper White River watershed.

The Action Alternatives may result in beneficial economic effects for minorities and low-income populations due to the increased employment opportunities at Crystal Mountain (direct) and other communities in Pierce and King Counties (indirect) (see Section 4.3.4.3–Impacts Common to All Action Alternatives).

Indian Tribes will continue to be involved with the implementation and monitoring of the selected alternative (see Mitigation Measure HR7 in Table 2.4-2).

4.3.4.2 Impacts – Alternative 1 (No Action Alternative)

Alternative 1 is expected to produce very few measurable new social and economic impacts. This No Action Alternative allows the resort to improve some deficiencies and to accommodate

a portion of anticipated regional population growth within its current operating parameters. Developments in Alternative 1 would not attract new market segments to the business.

Population

Little in-migration would be directly attributable to Alternative 1. The seasonal nature and relatively low pay scales of the vast majority of ski resort jobs generally attract few new full-time residents to an area. Most of the seasonal jobs are typically filled either by transient employees staying only through the season, or by residents already living in the area or moving to the area for reasons other than seasonal resort employment opportunities. Full-time, year-round employment opportunities are more likely than seasonal jobs to attract new residents to an area; however, relatively few such positions would be created as a result of Alternative 1 improvements.

The majority of new resort-based jobs, both seasonal and year-round, would likely be absorbed by the population increases projected by the State of Washington for Pierce and King Counties. By 2010, Pierce County is projected to add 125,000 residents, while King County is projected to add 174,000 (WOFM, 1998).

It is possible that a small amount of projected county in-migration may settle in gateway communities such as Greenwater and Enumclaw as a direct result of new employment opportunities at the resort, or to occupy jobs supported by increased spending by visitors passing through those towns. However, current trends in the annual average growth rates of the populations of Buckley (1.5 percent annually from 1990 through 1998), Bonney Lake (3.4 percent annually), and Enumclaw (4.8 percent annually) (WOFM, 1998) suggest that established population growth patterns are more likely to absorb new employment opportunities at Crystal Mountain.

Housing

Because the Full Time Employee (FTE) jobs created under this alternative are unlikely to sponsor in-migration to the area, no measurable impact is expected on housing supplies. Current trends in housing construction in communities within commuting distance of Crystal Mountain suggest that increases in housing supplies should be sufficient to accommodate growth in housing demand under Alternative 1. Alternative 1 would generate demand for up to 40 additional housing units by 2011 (see Table 4.3.4-1).

The most significant impact of Alternative 1 on housing is the lack of nearby housing units. The City of Enumclaw, with a drive time of 45 to 50 minutes to Crystal Mountain, is the closest place for Crystal Mountain employees to live that cannot be accommodated on-site. The lack of additional resort employee housing under this alternative would inhibit the resort's ability to fill seasonal jobs consistently for the duration of the winter season.

Employment

Negligible impacts on employment in the region can be expected under Alternative 1. Relatively few short-term jobs would be supported by construction projects, and a relatively minute number of primarily seasonal jobs would be created over the long-term.

Under Alternative 1, development costs are estimated to total \$13.8 million. These costs are primarily associated with upgrading Crystal's base area sewage treatment system and previously approved projects, including construction of the Campbell Basin Restaurant and night lighting installation.

Alternative 1 would sponsor short-term construction related employment totaling 195 FTE jobs over the next few years, including direct, indirect, and induced jobs throughout Pierce County (see Table 4.3.4-3).

Under Alternative 1, the addition of the previously approved Campbell Basin restaurant, coupled with slow growth in visitation and associated spending, would likely create an additional 15 long-term FTE jobs associated with Crystal Mountain operations and other base area businesses by the year 2011. These FTE jobs represent 2 full-time, year-round positions, 49 winter seasonal jobs, and 2 summer seasonal jobs.

Away from the resort, additional visitor and employee spending would be expected to support approximately 39 additional long-term FTE jobs within Pierce County, for a total of 208 FTE non-resort jobs; this compares to an estimated 169 FTE jobs away from the resort under existing conditions. No significant increase in summer employment would be expected under Alternative 1.

Personal Income

Individual income levels described in the Socioeconomics section of Chapter 3 are not likely to be affected by the development proposed in Alternative 1, in terms of base salaries and wages. This is true both for resort and non-resort jobs.

The seasonal and unskilled nature of the majority of jobs created at the resort would continue to warrant compensation comparable to current levels. In times of labor shortages, mountain resorts periodically offer additional incentives to attract seasonal help, rather than alter standard pay scales. These incentives typically take the form of bonuses based on a returning employee's length of service, or a new employee remaining at the resort through specified dates. Normally these types of incentive programs address cyclical employment shortages, but do not produce **long-term impacts** on base pay scales for resort employees.

Employment supported by visitor and employee spending away from the resort generally does not experience wage or salary adjustments in association with resort operational changes. For example, pay scales for jobs such as retail clerk, chef, or accountant typically remain within a specified salary range, regardless of the ongoing operations of a nearby mountain resort. This is particularly case in robust economies, such as those of Pierce and King Counties.

Spending and Economic Characteristics

Under Alternative 1, it is expected that Crystal Mountain would remain an important component of the winter economy within the impact area. However, Alternative 1's overall impact on spending and the economic characteristics of the area would be much less than under Alternatives 2-6.

Estimates of projected Crystal Mountain payroll expenditures for the year 2011 are summarized by alternative in Table 4.3.4-7 later in this section⁴³. Under Alternative 1, resort payroll expenditures would be expected to reach \$3.4 million by 2011 (1999 dollars). Associated payroll taxes would be expected to reach \$775,000 under Alternative 1.

By 2011, it is estimated Alternative 1 would generate total sales tax revenues that reflect an increase of 24 percent over current conditions on an annual basis.

Based on estimated development costs⁴⁴, and assuming a levy rate of \$15.85 per \$1,000 assessed valuation, Alternative 1 would generate additional property tax revenue of approximately \$110,000 upon project build-out⁴⁵. Based on total estimated resort spending, land use fees to the Forest Service under Alternative 1 would increase by roughly 23 percent by 2011, in comparison to 1998/99 land fee estimates.

As depicted in Table 4.3.4-6, Alternative 1, which implements a new sewer system and previously approved projects, reflects the lowest cost per visit generated. However, Alternative 1 lacks the additional revenue sources of expanded guest lodging and non-skier tram rides provided by Alternatives 2, 3, 5, and 6 and would limit visitation growth and corresponding gross revenues over the long-term.

Under Alternative 1, due to the lack of substantial capacity additions, Crystal Mountain could logically choose to increase lift ticket prices beyond the standard rate of inflation in order to control weekend and holiday crowds, as well as to enhance profitability over the long-term.

Based upon current population and visitor growth projections for the Puget Sound area, as well as prevailing skier preferences, Alternative 1 represents insufficient quality improvements, capacity and/or variety to meet skier demands over the long-term. In this regard, Alternative 1 would indirectly promote the economic success of other ski areas in the region and elsewhere, as incrementally greater proportions of the regional population would seek other opportunities to meet their needs, including out-of-state ski areas.

⁴³ Resort payroll expenditures were estimated using two-year average expenditures from the Economic Analysis of US Ski Areas 1997/98 for Pacific West resorts of appropriate lift capacities as a percentage of resort gross revenue; amounts reflect 1999 dollars (RRC Associates, 1998).

⁴⁴ Assumes taxable valuation at 50 percent of total capital costs of all projects, excluding ski trails.

⁴⁵ These estimates yield tax expenditures in line with appropriate NSAA average tax expenditures as a percentage of resort revenue.

Public Services

Under Alternative 1, it is expected that Crystal Mountain's employment of one full-time security patrolman would meet resort needs during the winter months for the foreseeable future. No additional private security staffing requirements would be expected at Crystal Mountain during the summer months. Summer demand for State Police services on SR 410 would remain within current trends.

Based on projected visitation, winter staffing requirements by the year 2011 for the Pierce County Sheriff's Office at Crystal Mountain, and winter demands on the Washington State Patrol along SR 410 and on the county-maintained Crystal Mountain Boulevard, could each increase by 29 percent under Alternative 1. Assuming the incidence of theft continues at the current rate, total theft losses at the ski area on an annual basis could reach roughly \$129,000 under this alternative.

Applying skier injury frequency ratios described in Chapter 3 to the skier visit totals projected for the year 2011, Alternative 1 yields total ambulance transports of approximately 74, and airlift transports of 9.

Applying vehicular traffic incident figures described in Chapter 3 to skier visit projections, the accident rate under Alternative 1 would be 100.9 percent of the current rate, or 119.3 accidents per year, with 63.2 accidents occurring in the winter ski season (see Section 4.3.5 - Transportation). With no changes in summer operations, Alternative 1 would not sponsor changes in summer use trends at Crystal Mountain. Growth in summer visitation to Crystal Mountain would parallel growth of the regional population and background traffic on SR 410, estimated at 1 percent annually. Accordingly, under Alternative 1, average summer daily traffic on SR 410 would reach 3,383 by the year 2011 (MRNP, 1995) (see Section 4.3.5- Transportation). Summer demand on the Greenwater Fire District's emergency services for traffic related accidents could increase on a similar trend, reflecting an additional nine calls over a 90 day period. Regarding potential increases in summer injury or trauma-related incidences at Crystal Mountain, by the year 2011, one might expect a total of two annually under Alternative 1.

Assuming the accumulation of solid waste continues at current rates, and based on projected visitation, by 2011, annual solid waste production within the Crystal Mountain community would increase by 25 percent under the No Action Alternative (see Section 4.3.6-Utilities).

4.3.4.3 Impacts Common to all Action Alternatives

Alternatives 2 through 6, the Action Alternatives, propose a range of facility enhancements that would allow the resort to broaden its appeal in the marketplace and accommodate both a wider variety and a greater number of visitors annually. Alternatives 2 through 6 would likely produce measurable impacts within the study area.

Population

Little in-migration would be directly attributable to the proposed project. The seasonal nature and relatively low pay scales of the vast majority of ski resort jobs generally attract few new full-time residents to an area. Most of the seasonal jobs are filled either by transient employees staying only through the season, or by residents already living in the area or moving to the area for reasons other than seasonal resort employment opportunities. Full-time, year-round employment opportunities are more likely than seasonal jobs to attract new residents to an area; however, relatively few such positions would be created as a result of the proposed improvements.

The majority of new resort-based jobs, both seasonal and year-round, would likely be absorbed by the population increases projected by the State of Washington for Pierce and King Counties. By 2010, Pierce County is projected to add 125,000 residents, while King County is projected to add 174,000 (WOFM, 1998).

It is possible that a small amount of projected county in-migration may settle in gateway communities such as Greenwater and Enumclaw as a direct result of new employment opportunities at the resort, or to occupy jobs supported by increased spending by visitors passing through those towns. However, current trends in the annual average growth rates of the populations of Buckley (1.5 percent annually from 1990 through 1998), Bonney Lake (3.4 percent annually), and Enumclaw (4.8 percent annually) (WOFM, 1998) suggest that established population growth patterns are more likely to absorb new jobs than new employment opportunities at Crystal Mountain are to sponsor population growth.

The proposed creation of 200 additional pillows (beds) for employee housing at Crystal Mountain in Alternatives 2, 3, and 4 would increase the seasonal population of the resort community to approximately to 285. Under Alternative 5, 58 additional pillows would be added for employee housing and would increase the seasonal resort population to about 143. The number of pillows for employee housing would increase by 105 under Alternative 6, which would increase seasonal resort population to about 190. For the most part, these numbers reflect peak seasonal occupancy of transient housing rather than a permanent resident population.

Housing

As described above, the creation of additional employee housing at Crystal Mountain under each of the Action Alternatives would accommodate many of the transient workers attracted to new seasonal jobs created by the proposed development projects.

Each Action Alternative would generate increased housing demand over the next decade. Assuming an average of 1.4 workers/jobs per housing unit (U.S. Bureau of the Census, 1990), estimated new housing demand generated by each Alternative for the year 2011 is summarized in Table 4.3.4-1.

**Table 4.3.4-1
Estimated On-site and Off-site Employee Housing Demand Generated by Crystal
Mountain Visitor Spending (Estimated for 2011)**

	Current Conditions	Alternatives					
		1	2	3	4	5	6
Total Employment ^a	456	510	896	873	802	870	800
Resort workers living on-site	85	85	285	285	285	143	190
Resort workers living off-site	370	425	611	588	517	727	610
Total Est. housing demand	264	304	436	420	369	519	436
Increased housing demand ^b	0	40	172	156	105	255	172

^a Includes on-site, off-site, direct, indirect, and induced employment expressed as full-time equivalent jobs.

^b Estimated increased total off-site housing demand in 2011 over current/1999 housing demand generated by Crystal Mountain visitor spending. Source: Crystal Mountain; U.S. Bureau of the Census, 1990; SE GROUP.

Under Alternatives 2-6, other new resort-based, winter seasonal jobs would not be accommodated by new employee housing. These jobs may heighten demand for home sales and seasonal apartment rentals within a reasonable commuting distance of the resort, and may contribute to continued price increases recently experienced in the region.

Prices for both rental units and home sales in the region escalated during the 1990s. Also, Pierce County has added new housing units at the rate of 2.4 percent annually, while the rate in Enumclaw averaged 4.7 percent annually from 1990 to 1998 (WOFM, 1998). These trends in pricing and unit construction are indicative of a healthy regional economy and strong regional population growth, and are likely to continue regardless of which Alternative is implemented at Crystal Mountain.

Employment

Both short-term and long-term employment impacts are expected under each Action Alternative. Short-term impacts reflect countywide employment associated with the construction of the proposed improvements, including jobs at the construction site, as well as jobs with affected suppliers, manufacturers, and service providers. Long-term employment impacts reflect jobs supported by visitor and employee spending both at the resort, and at unrelated businesses of all types in Pierce and King Counties.

Short-term Construction Related Employment

Short-term employment projections are based on phased⁴⁶ implementation of the alternative development plans and estimated costs⁴⁷ for each phase of development. Generally, these projections reflect expected total development costs, inclusive of expenditures for some specialized equipment such as lifts, snowmaking equipment, and grooming machines. Though labor costs associated with lift installations would be primarily local, the majority of hard costs for specialized ski area equipment would be paid to businesses outside of Pierce or King

⁴⁶ A phase generally represents one year of construction activity; Phase 0 represents previously approved and ongoing projects.

⁴⁷ Development costs were estimated by Sno.engineering, Inc. and CMI using manufacturers' and suppliers' estimates, Marshall Valuation Service, and the Sno.engineering database for comparable resort projects; excludes costs not yet determined for restoration projects.

Counties (see Table 4.3.4-2). Consequently, employment associated with the hard costs would not support significant short-term employment within the impact area.

Table 4.3.4-2
Estimated Development Cost by Alternative Through 2011 (\$ in Millions)

	Alternative					
	1	2	3	4	5	6
Total Development Costs	\$13.84	\$97.08	\$93.65	\$73.66	\$92.33	\$94.05
Spent within impact area	\$13.84	\$66.23	\$64.13	\$62.25	\$63.78	\$65.12
Spent outside impact area	\$0.00	\$30.85	\$29.51	\$11.41	\$27.55	\$28.93

All values expressed in 1999 dollars.

Source: Crystal Mountain, Sno.engineering, Inc., Marshall Valuation Service.

Given the above cost estimates, direct, indirect, and induced short-term employment estimates were calculated utilizing the IMPLAN Professional Impact Analysis Software⁴⁸. The job totals include employment in a wide range of unrelated businesses and services operating in Pierce County and reflect full-time equivalent (FTE)⁴⁹ jobs. Associated short-term employment impacts are summarized by Alternative in Table 4.3.4-3 below.

⁴⁸ IMPLAN Professional Impact Analysis Software is an input/output model applying specific Pierce County economic multipliers to estimated spending associated with the proposed resort development and operations. The IMPLAN system has been in existence since 1979 and was originally developed by U.S. government agencies to assist with regional land and resource management planning.

⁴⁹ A full-time Equivalent (FTE) job represents employment for 40 hours per week, 50 weeks per year; resort part-time employment was calculated at 20 hours per week; winter seasonal resort jobs were calculated to last 20 weeks, summer seasonal 16 weeks.

Table 4.3.4-3
Estimated Construction-Related Short-Term Employment (new short-term jobs)

New Jobs by Type and Alt.	Year											Cumulative New Jobs
	0	1	2	3	4	5	6	7	8	9	10	
Alternative 1												
Direct ^a	23	48	23	NA	NA	NA	NA	NA	NA	NA	NA	94
Indirect	11	29	14	NA	NA	NA	NA	NA	NA	NA	NA	54
Induced	10	25	12	NA	NA	NA	NA	NA	NA	NA	NA	47
FTE Total	44	102	49	NA	NA	NA	NA	NA	NA	NA	NA	195
Alternative 2												
Direct	23	94	43	71	40	65	67	65	0	23	56	547
Indirect	11	51	26	24	19	32	32	21	0	11	27	254
Induced	10	46	22	26	18	29	30	24	0	11	25	241
FTE Total	44	191	91	121	77	126	129	110	0	45	108	1,042
Alternative 3												
Direct	23	94	36	64	39	83	69	45	16	5	56	530
Indirect	11	51	23	21	19	40	33	11	8	2	27	246
Induced	10	46	19	23	18	37	31	14	7	2	25	232
FTE Total	44	191	78	108	76	160	133	70	31	9	108	1,008
Alternative 4												
Direct	23	87	51	71	11	81	89	43	56	NA	NA	512
Indirect	11	48	30	24	5	39	43	11	27	NA	NA	238
Induced	10	43	26	26	5	36	40	14	25	NA	NA	225
FTE Total	44	178	107	121	21	156	172	68	108	NA	NA	975
Alternative 5												
Direct	23	89	26	63	30	131	66	41	8	56	NA	533
Indirect	11	49	15	21	15	63	32	10	4	27	NA	247
Induced	10	43	13	23	13	59	30	13	4	25	NA	233
FTE Total	44	181	54	107	58	253	128	64	16	108	NA	1,013
Alternative 6												
Direct	23	87	22	67	38	127	67	59	56	NA	NA	546
Indirect	11	48	13	22	18	61	33	18	27	NA	NA	251
Induced	10	42	11	25	17	57	30	21	25	NA	NA	238
FTE Total	44	177	46	114	73	245	130	98	108	NA	NA	1,035

Source: Crystal Mountain; Sno.engineering, Inc.; IMPLAN Professional Impact Analysis Software.

^a Direct Employment represents employment by Crystal Mountain, Inc., Indirect Employment represents employment by other operators at Crystal Mountain (such as concessionaires or construction contractors) and Induced Employment represents employment by businesses not associated with Crystal Mountain (such as retail shops or restaurants along SR 410 or construction suppliers).

Long-term Employment

Long-term employment estimates for the resort and base area businesses were developed from data provided by Crystal Mountain management. Under all alternatives, including no action, increased visitation would sponsor employment increases, both on-site and off-site. Long-term employment impacts for jobs off-site, including direct, indirect and induced employment, were calculated with the IMPLAN Professional Impact Analysis Software input/output model, using estimated visitor spending⁵⁰ by alternative for the 2011 operating year. The non-resort FTE job totals include employment in a wide range of unrelated businesses and services operating in Pierce and King Counties.

Alternatives 2 through 6 would sponsor significant increases in long-term employment at Crystal Mountain as a result of additional lifts, day lodges/restaurants, hotel rooms, grooming, snowmaking, and services, as well as expanded summer operations.

Given the robustness and size of the Pierce and King County economies, none of the alternatives represents a sizable impact on the economies or total employment of the region. Overall, increased total FTE employment of 346 to 440 sponsored by the Action Alternatives (by the year 2011), represent increases of only 0.027 percent to 0.034 percent over total 1998 employment in Pierce and King Counties of 1.3 million. Long-term employment impacts, both on-site and off-site, are summarized by Alternative in Table 4.3.4-4.

⁵⁰ Visitor spending was estimated by applying averages from Economic Analysis of U.S. Ski Areas 1997/98 (RRC Associates, 1998) and Oregon Ski Economics - 1990/91 Season (Parker et al., 1991) to skier visit projections for each alternative; based on per capita two-year NSSA average resort spending for appropriate region and size of resorts, and Oregon study percentages for resort, lodging, and non-resort spending; amounts reflect 1999 dollars.

**Table 4.3.4-4
Estimated Long-term Employment (Estimated for 2011)**

Source of Long-term Jobs	Current Conditions	Alternatives					
		1	2	3	4	5	6
Crystal Mountain Operations							
Full-time/Year-round	30	30	35	32	30	32	35
Winter Seasonal Full-time	300	315	565	550	530	550	565
Winter Seasonal Part-time	100	120	185	180	180	180	185
Summer Seasonal Full-time	25	25	55	55	28	55	55
Summer Seasonal Part-time	15	15	30	30	20	30	30
FTE Employment ^a	180	190	320	310	290	310	320
Other Base Area Businesses							
Full-time/Year-round	20	22	35	30	28	30	35
Winter Seasonal Full-time	138	140	220	220	215	220	220
Winter Seasonal Part-time	78	90	130	130	130	130	130
Summer Seasonal Full-time	34	35	80	80	40	80	80
Summer Seasonal Part-time	31	32	65	65	45	65	65
FTE Employment ^a	107	112	185	180	160	180	185
Off-Site FTE Employment^a							
Direct	136	168	316	309	284	306	315
Indirect	13	16	30	30	27	30	30
Induced	20	24	45	44	41	44	45
Total Off-site FTE	169	208	391	383	352	380	390
Total FTE Employment^a	456	510	896	873	802	870	895

^aFull Time Equivalents: Full-Time calculated at 50 weeks/year, 40 hours/week; Part-Time calculated at 20 hours/week, winter season 20 weeks/year, summer season 16 weeks/year.

Source: Crystal Mountain, SE GROUP, and IMPLAN Professional Impact Analysis Software input/output model.

Personal Income

Individual income levels described in the socio-economics section of Chapter 3 are not likely to be impacted by the development proposed in Alternative 1, in terms of base salaries and wages. This is true both for resort and non-resort jobs.

Total personal income in Pierce and King Counties would be impacted on an aggregate basis in Alternatives 2 through 6. As described in the employment section, spending generated by the ongoing operations of the proposed expanded resort would support additional jobs. These jobs would result in personal income for new members of the workforce, or additional personal income (through additional hours worked, rather than through increased compensation for the same number of hours) for current members of the workforce.

Overall, given the size of the Pierce and King County economies, increases in total personal income sponsored by Alternatives 2 through 6 would be negligible (i.e., increases of less than 0.029 to 0.035 percent over 1998 values assuming constant dollars)⁵¹.

⁵¹ Because the average ski area job pays somewhat less than the average job in Pierce and King Counties, actual increases in total personal income would likely be somewhat less than total increases in employment.

Spending and Economic Characteristics

Annual resort expenditures for operating costs such as land use fees and taxes (property and sales) would be expected to increase in accordance with visitation and revenue increases. These payments generally return to the community and generate additional spending and employment within the impact area. Estimates of these payments for the year 2011 are summarized by alternative in Table 4.3.4-7 later in this section.

Visitor Spending

Visitor spending projections by alternative are based primarily on projected winter and summer visitation to Crystal Mountain. Visitation and visitor spending are expected to increase under each Action Alternative. These projections vary by alternative, depending on the proposed amenity mix (winter and summer) and the ski area capacity under each of the alternatives. Project phasing also affects visitation patterns and visitor spending in each of the alternatives. Projected summer visitation and associated visitor spending at the resort is driven primarily by planned phasing for the tram installation and hotel construction.

Overall, it is expected that off-site summer visitor spending sponsored by Crystal Mountain would be relatively small, since it is expected that the majority of visitors using the resort in summer would be a subset of those already visiting MRNP or passing through the area for other reasons. For the purpose of this analysis, it is assumed that 75 percent of those who utilize the Crystal Mountain site during the summer would visit the general area regardless (e.g., on tour of MRNP). Therefore, it is assumed that 25 percent of total summer visitation to Crystal Mountain under the alternatives represents new summer visitors to the social and economic impact area. This assumption is supported by the National Visitor Use Monitoring Report (USFS Region 6, 2001) which indicates that the MBSNF realizes an average of 1.1 site visits per national forest visit, indicating that 9 out of 10 MBSNF visitors go to one site within the forest, and that one in ten visits more than one site (see Section 3.3.2.2 - Overall Recreation Demand – Mt. Baker-Snoqualmie National Forest). See also Table 2.6-1, Table 4.3.2-2, and the memo entitled *Assumptions Used in the Recreation, Social and Economic Factors, and Transportation Analysis* in Appendix B.

Based on projected visitation and applying averages from NSAA and Oregon economic studies (RRC Associates, 1998; Parker et al., 1991), estimated winter and summer visitor spending on services and lodging at the resort and non-resort purchases (off-site) for the year 2011 is shown by alternative in Table 4.3.4-5 below.

**Table 4.3.4-5
Projected Visitor Spending Sponsored by Crystal Mountain in 2011**

	Current Conditions	Alternatives					
		1	2	3	4	5	6
Number of Winter Visits	318,500	391,400	563,400	546,800	513,000	537,600	557,900
Number of Summer Visits	20,000	22,200	128,100	128,100	33,800	128,300	128,700
Resort Spending (\$000)^a							
Winter							
Tickets/Services	\$12,055	\$14,814	\$25,353	\$24,606	\$23,085	\$24,642	\$25,556
Lodging	\$2,526	\$3,196	\$5,595	\$5,579	\$5,449	\$5,591	\$5,643
Total Winter	\$14,581	\$18,011	\$30,948	\$30,185	\$28,534	\$30,233	\$31,198
Summer							
Tickets/Services	\$240	\$266	\$2,306	\$2,306	\$473	\$2,309	\$2,317
Lodging	\$0	\$0	\$683	\$683	\$287	\$675	\$675
Total Summer	\$240	\$266	\$2,989	\$2,989	\$761	\$2,984	\$2,992
Total Resort Spending	\$14,821	\$18,277	\$33,937	\$33,174	\$29,294	\$33,218	\$34,190
Off-Site Spending (\$000)^a							
Winter	\$7,168	\$8,864	\$15,877	\$15,515	\$14,707	\$15,329	\$15,794
Summer	\$69	\$77	\$923	\$923	\$348	\$918	\$919
Total Off-Site Spending	\$7,237	\$8,940	\$16,799	\$16,437	\$15,056	\$16,246	\$16,713
Total Winter Spending^a	\$21,749	\$26,874	\$46,825	\$45,700	\$4,241	\$45,562	\$46,993
Total Summer Spending^a	\$310	\$343	\$3,911	\$3,911	\$1,109	\$3,902	\$3,910
Total Annual Spending^a	\$22,058	\$27,217	\$50,736	\$49,611	\$44,350	\$49,464	\$50,903

Source: *Economic Analysis of US Ski Areas 1997/98* (RRC Associates, 1998); *Oregon Ski Economics - 1990/91 Season* (Parker et al., 1991); *Whistler Business Performance Statistics 1/99*; SE GROUP

^a Projected visitor spending values are in thousands of U.S. dollars (\$000)

Tax Distributions and Use Fees

Retail sales and local sales and use tax revenues would be expected to increase in accordance with visitation and visitor spending. Though sales tax does not apply to all sales, it is charged on a majority of consumer products associated with resort visitation, such as equipment sales and rentals, guest accommodations, and restaurant meals. The income earned by Crystal Mountain Inc. and Crystal Mountain employees is expected to increase the overall tax base available to local governments (road maintenance, police, fire and emergency etc.) through: increased sales and property tax revenue generated by increased visitor and Crystal Mountain employee spending both on- and off-site; money spent by Crystal Mountain to implement the proposed projects; and the economic ripple effect on local communities. Therefore, it is anticipated that the increased costs to government entities will be funded by the increased tax base provided by the projected increase in visitation and spending by the Action Alternatives.

As a result of new lifts, day lodge, hotel, parking and utility development, each of the alternatives would sponsor substantial increases in property tax revenues over the long-term. Forest Service land use fees would increase under all Action Alternatives, commensurate with visitation and gross ski area revenues.

Economic Viability

Project viability over the short- and long-term would fluctuate by alternative, and is dependent upon a number of variables including, but not limited to: the actual timing of construction phases; method of financing; pricing structure; market response to improvements; etc. Table 4.3.4-6 is included to provide a rough sense of *potential* economic viability, by alternative, by *estimating* development costs per additional visit (winter and summer) generated over an 11-year period. Table 4.3.2-6 is not intended to provide a strict or even accurate method of comparison between the economic viability of alternatives.

**Table 4.3.4-6
Estimated Development Cost Per Visit Generated By Alternative**

Alt	Total Development Cost	Total Additional Visits Over Existing Conditions ^a	Development Cost Per Visit Generated
1	\$13,841,060	721,068	\$19.20
2	\$97,082,087	2,515,488	\$38.59
3	\$93,649,541	2,414,068	\$38.79
4	\$73,664,435	1,422,478	\$51.78
5	\$91,329,600	2,471,198	\$36.96
6	\$94,054,645	2,621,548	\$35.88

^a Total number of additional visits (Summer and Winter) over an 11 year period of time.
Source: Crystal Mountain; SE GROUP.

Ticket Pricing

The effect of capital investments on daily lift ticket pricing is a common concern among skiers. Substantial capital costs under all Action Alternatives would likely sponsor some increase in lift ticket prices beyond the standard rate of inflation.

However, capital investments and associated interest payments, if any, represent only a portion of the overall costs of operating a mountain resort. Prices for tickets and other services are set annually in consideration of the operating costs incurred by each individual resort. Inflation, labor costs, supplier relationships, competitive pressures, and other local and regional economic factors all affect price strategies.

In general, increased visitor volumes anticipated from, and generated by, capital improvements help mitigate price increases. In addition, resorts generate revenue from many sources involving discretionary visitor expenditures, including services such as equipment rentals, ski lessons, and food service. Price and/or programming adjustments of these services often mitigate lift ticket price increases by balancing resort revenue generation and operating expenditures.

Typically, larger ski areas, particularly destination-oriented ski resorts, charge higher daily ticket prices than smaller resorts. Based on recent NSAA Economic Surveys, prices for weekend adult tickets at Pacific West region ski areas have averaged 5 to 8 percent higher at the largest areas in terms of lift capacity (Crystal would fit in this category in Alternatives 2 through 6) in comparison to the next size level (Crystal currently and in Alternative 1). However, resort guests generally appear willing to accept the marginal additional cost in consideration of the value of the recreation experience, as evidenced by the higher average skier visit counts (701,000 versus 302,000 in 1997/98) and peak-day visitation (13,400 versus 6,600) at the largest resorts in comparison to the next size level (RRC Associates, 1995-1998). As discussed in the Recreation section of Chapter 3, Northwest skiers expressed the highest level of support for high speed quads and additional terrain, and the willingness to spend an additional \$2.08 and \$1.91 per lift ticket to obtain them (RRC Associates, 1993; RRC Associates, 1994c).

Recently, major resort operators have exhibited a sensitivity to pricing concerns among their core visitors, and now typically accommodate price-sensitive visitors with deeply-discounted early-purchase options. For frequent skiers of specific resorts, and those willing to commit to ticket purchases several months in advance of their visits, even the largest of U.S. destination resorts have begun to offer a wide range of deeply discounted ticket and pass options (based on information from *The Snow Industry Letter*, 1999 and other editions). These programs represent resort responses to specific market demands and competitive pressures.

Viability of Competing Ski Areas

Evidence of strong demand for all ski areas serving the region (as cited in the recreation section), combined with the inability of any of the local areas to implement substantial capacity expansions, suggest that none of the Action Alternatives would likely detract significantly from the economic viability of other Washington ski area operations. Based upon current population and visitor growth projections for the Puget Sound area, Alternatives 2 through 6 would absorb a share of new and/or latent demand for alpine skiing generated in the area over the next decade, resulting in little change from the current rate of skier departures to other areas. Other local ski areas are implementing and/or developing new MDPs with the intent of retaining their respective shares of the 210,000 projected additional visits.

Guest Lodging

The proposed addition of commercial lodging facilities in the Action Alternatives would likely have an effect on the existing lodging operations at Crystal Mountain. It is expected that existing commercial lodging facilities serving Crystal Mountain would be able to maintain, or improve, their current business levels under the Action Alternatives, provided appropriate maintenance schedules and pricing strategies are implemented.

Crystal Mountain is not widely viewed as a destination ski area, due in large part to the limited existing commercial lodging capacity. Currently, commercial lodging establishments can accommodate approximately 730 guests, or roughly 10 percent of the mountain's current daily skier capacity. The existing lodging facilities are typically fully occupied on winter weekends and holiday periods, while midweek occupancy has reportedly increased in recent seasons with

the introduction new package options to average approximately 60 percent (Phyllis Hartford, Pers. Comm., 1999b). These occupancy rates translate to roughly 75,000 visitor nights sold over the winter season at current capacity.

Additional high-quality commercial lodging rooms complementing the existing and planned mountain capacities would help broaden the appeal of the resort to more overnight skiers, widening the market of potential visitors to the area. Increased visitor totals from a wider marketplace would likely enhance the business volumes of existing lodging establishments, as evidenced by growth patterns at other mountain resorts.

For example, data from Whistler resort in nearby British Columbia suggest that increased capacities and growth in visitation at a developing mountain resort destination result in a much higher number of overnight room sales. Whistler currently is home to over 5,800 hotel beds, with roughly 3,200 more approved for future construction. In the 10-year period from 1988 through 1998, the Municipality of Whistler reported these statistics: annual room nights available increased by roughly 250 percent (from about 400,000 to 1.4 million), due to construction of new lodging facilities; occupancy rates held between 60 and 70 percent in winter, and fluctuated between 40 and 55 percent in summer; and average room rates increased by more than 50 percent (Whistler Resort Association, 1998b). During the same 10-year period, the Whistler Resort Association reported the following statistics: winter room nights sold increased by 137 percent (from 188,760 to 448,467); summer room nights sold increased by 175 percent (from 133,320 to 367,603); and skier visits increased by 74 percent (from just under 1.1 million to over 1.8 million) (Whistler Resort Association, 1998a).

The proposed commercial lodging capacities and projected visitation increases at Crystal are modest in scale in comparison to Whistler. Commercial guest pillows are proposed to increase by 95 percent under Alternatives 2 through 6, to a total slightly over 1,400. Skier visits under Alternatives 2 through 6 are projected to increase between 61 percent (in Alternative 4) and 77 percent (in Alternative 2), totaling 513,000 to 563,400 skier visits annually as of 2011. Overnight skier visits are projected to nearly double by 2011 under the Action Alternatives, to levels of approximately 140,000 winter overnight skiers annually, with occupancy rates comparable to current levels.

Public Services

Fire Protection

Overall, it is expected that Alternatives 2 through 6 would pose no significant increase in demand for local agency fire protection services, as compared to Alternative 1. In the short-term, each of the alternatives represents increased potential for wild-land fires during construction due to greater human activity, use of chain saws and other construction equipment. With proper mitigation, however, increased fire threat under all Action Alternatives would be reduced to a level of insignificance.

While Crystal Mountain has not required the fire protection services of the Forest Service or county over the last 5 years, each of the Action Alternatives represents increased potential for

structural fire ignition during the winter, due to increased building square footage and use levels. However, more stringent fire codes, automatic sprinkling systems, and employee training proposed under any new development program would tend to offset the potential for increased fire incidence and demand for fire protection services. In addition, increased employee housing at Crystal Mountain under Alternatives 2 through 6 could enhance staffing of the Crystal Mountain Fire District on a year-round basis.

During the summer months, greater use of the Crystal Mountain site under the Action Alternatives would also increase the potential for structural and wild-land fire ignition within the permit boundary. As indicated above, potential increases in structural fires would be offset by improved building codes and fire protection equipment. Over the long-term, ski trail clearing and/or glading under the Action Alternatives would reduce overall fuel accumulation within the ski area boundary, reducing wild-land fire risk.

Generally, on-site fire protection equipment would increase under each of the Action Alternatives. Expansion of the Crystal Mountain snowmaking system under Alternatives 2 through 6 would provide greater protection against the threat of structural fires year-round and wild-land fires throughout the summer months, by supplementing existing water supply and distribution capacities.

Visitor absorption in Alternatives 2, 3, 5 and 6 would have a minor effect of reducing the potential incidence of fire outside the permit boundary, particularly in dispersed areas along SR 410 and within Mt. Rainier National Park. This is particularly true since these alternatives would serve to concentrate summer visitor use in an area that is well protected against fire.

Police Protection

Potential increases in winter demand for police protection/services at Crystal Mountain and along SR 410 would be tied to additional visitation to the area. Such demand would be related to increased potential for traffic accidents and other infractions along Highway 410, as well as increased potential for theft, search and rescue calls, etc. in the vicinity of the ski area.

As is currently the case, Crystal Mountain would continue to hire the Washington State Patrol on a contract basis to meet winter demand along SR 410 and on the county-owned Crystal Mountain Boulevard, particularly during predicted storm events (budgeted at about 50 days per season) at key road sites (i.e., the chain-up area at the junction of SR 410 and Crystal Mountain Blvd.). Based on current and projected traffic levels, under no alternative would the winter demand on State Patrol services on SR 410 approach levels currently experienced during the summer months.

Under the Action Alternatives, the need for one additional part-time to one additional full-time resort security patrolman during the winter would be expected by 2011. Under Alternatives 2, 3, 5, and 6, substantial increases in summer visitation, driven primarily by the tram and additional lodging, would likely sponsor the need for one additional full-time private security patrolman at Crystal Mountain during the summer.

Emergency Medical

The anticipated increases in terrain and visitation under the Action Alternatives would result in a need for increased emergency medical facilities at Crystal Mountain. The projects proposed under each of the Action Alternatives include both an increased number of ski patrol duty stations throughout the resort, and an expanded amount of floor space for duty stations and the first aid station.

The primary first aid station would be located in the Bullion Basin area under Alternatives 2 through 6, and the total floor space for first aid facilities in the resort's base area would increase by approximately 1,900 square feet. The number of duty stations on the mountain would increase to accommodate new lift/ski pods, and total floor space would expand from about 700 square feet currently to 3,200-4,000 square feet under the Action Alternatives. Patrol and first aid staffing would be appropriately increased to man these facilities.

It is impossible to predict how many visitors in any given season would require emergency medical care. Nationally, data regarding ski injuries from the NSAA indicate that the overall rate of reported skiing injuries has declined by 50 percent over the past 25 years. Serious injuries are reported to occur at the rate of 0.87 per million skier visits recorded, and fatalities occur at the rate of 0.75 per million skier visits (NSAA, World Wide Web, 1999).

Crystal Mountain would continue to contract with outside ambulatory transportation suppliers such as American Medical Response (AMR) for ground transportation (including personnel and equipment on-site during peak periods), and Airlift Northwest for air transportation of visitors or employees requiring urgent hospital care.

In 1998/99 AMR reported transporting about 60 of Crystal Mountain's 318,500 skiing guests, while Airlift Northwest estimates responding to 5 to 10 calls at the resort annually. Applying these frequency ratios to the skier visit totals projected for the year 2011 for the various alternatives yields proportional increases in ambulance and airlift transports. Given that AMR and Airlift Northwest operate on a "for profit" basis, and recognizing that AMR allocates staff and emergency vehicles to Crystal Mountain based on demand, none of the alternatives would be expected to cause levels of emergency medical demand beyond the capabilities of the current private providers.

Expanded summer operations at Crystal Mountain under Alternatives 2 through 6 could result in some increase in demand on the Greenwater Fire District's emergency services during the summer months. However, as discussed in the "visitor spending" section, it is assumed that approximately 75 percent of summer visitation to Crystal Mountain would be from current MRNP visitors (see Appendix B). Therefore, 25 percent of the total projected summer visitation to Crystal Mountain would apply to new or additional traffic on SR 410. By the year 2011, this would equate to increased summer traffic on SR 410 of up to approximately 7 percent.

As noted in Chapter 3, in the summer of 1999, the Greenwater Fire District responded to over 90 vehicle accident related emergencies along SR 410 and two injury or trauma incidents at Crystal Mountain. Summer demand on the Greenwater Fire District's emergency services for traffic-

related accidents associated with increased resort visitation could increase by similar amounts, reflecting up to six additional calls for incidents along SR 410 over a 90-day period. Regarding potential increases in summer injury or trauma-related incidences at Crystal Mountain, by the year 2011, one might expect a total of up to 13 annually under the Action Alternatives.

Solid Waste

Under all alternatives, the Crystal Mountain community would continue to temporarily contain solid waste in trash compactors, with removal to a landfill elsewhere in Pierce County by Murray's Garbage Service. It is expected that other members of the resort community would continue to maintain separate contracts with Murray's Garbage Service. Assuming the accumulation of solid waste continues at current rates, and based on projected visitation, by 2011 annual solid waste production within the Crystal Mountain community would increase by up to 62 percent (over Alternative 1) under the Action Alternatives (see Section 4.3.6–Utilities).

4.3.4.4 Impacts - Alternative 2

Alternatives 2 through 6 produce the greatest measure of social and economic impacts, through increased visitation and increased visitor spending throughout the impact area. Overall, Alternative 2 provides the best opportunity for the resort to improve its facilities to appeal to a wider market, and to accommodate the widest variety and greatest number of visitors over the long-term.

Population

Potential population related impacts described for all Action Alternatives would apply to Alternative 2 (see Section 4.3.4.2–Impacts–Alternative 1).

Housing

New employee housing for an additional 200 workers in Alternatives 2, 3, and 4 would absorb roughly 40 percent of the expected winter seasonal job growth at the resort community (and more than 100 percent of new summer seasonal jobs), and provide the resort with a greatly improved basis for employee recruitment and retention for key seasonal jobs.

Demand for approximately 172 housing units away from the resort is estimated in Alternative 2. Much of this demand is likely to be met by construction trends accommodating current population growth for residents who are attracted to the area for other reasons, and who would fill most of the jobs created at Crystal Mountain.

The most significant impact on housing is likely to be a shortage of affordable housing within a reasonable commuting distance of the resort for those transient workers for whom employee housing may not be available at the resort. Rising property values and rents would limit off-site lodging options for this group. The increase in on-site employee beds, and the absorption of new jobs by the growing population base combine to mitigate much of this possible impact.

Employment

Total project costs under Alternative 2 are estimated at \$97.1 million. Though Alternative 2 lacks a parking structure/garage, it is the most costly of the alternatives.

Estimated short-term employment supported by construction projects in Alternative 2 average 95 FTE jobs annually over an 11-year period (see Table 4.3.4-3).

Under Alternative 2, by 2011, Crystal Mountain and other base area businesses would be expected to generate an estimated 505 resort-based FTE jobs. These FTE jobs reflect the addition of 20 full-time, year-round positions, 484 winter seasonal jobs (actual full-time and part-time jobs lasting only through the ski season, rather than annualized FTE jobs), and 125 summer seasonal jobs (see Table 4.3.4-4).

Away from the resort, by 2011, spending (direct, indirect, and induced) generated by ongoing operations of the improved resort under Alternative 2 would be expected to support 391 long-term jobs on a full-time-equivalent basis within Pierce County. This figure represents an increase of 183 FTE jobs over that of Alternative 1.

Personal Income

Potential impacts to personal income under Alternative 2 would be the same as described for all Action Alternatives (see Section 4.3.4.2-Impacts Alternative 1).

Spending and Economic Characteristics

Estimates of projected visitor spending sponsored by Crystal Mountain are summarized by alternative in Table 4.3.4-5. Under Alternative 2, visitor spending is projected to total \$50.7 million annually by 2011 (in 1999 dollars), including \$33.9 million at the resort and \$16.8 million elsewhere in Pierce and King Counties. This total represents a spending level more than 86 percent higher than the estimate of \$27.2 million for Alternative 1.

Estimates of projected Crystal Mountain payroll expenditures for the year 2011 are summarized by alternative in Table 4.3.4-7 later in this section. Under Alternative 2, the resort payroll expenditure would be expected to reach \$6.3 million (1999 dollars), and associated payroll taxes would be expected to reach \$1,895,000.

In regard to economic viability of the alternatives as presented previously in Table 4.3.4-6, beyond the 11-year horizon, Alternative 2 would likely surpass Alternative 6 in profitability, given its ability to comfortably accommodate more guests/growth. Under Alternative 2, substantially greater capital costs in comparison to the No Action Alternative would likely sponsor the need for ticket and other price increases beyond the standard inflation rate, though crowd control would be less of a motivating factor.

Overall, it is estimated that by 2011, Alternative 2 would generate total sales tax revenues that reflect an increase of 132 percent over current conditions on an annual basis. Based on estimated

development costs⁵², and assuming a levy rate of \$15.85 per \$1,000 assessed valuation, Alternative 2 also would generate additional property tax revenues of \$769,375 upon project build-out⁵³. Based on total estimated resort spending (see Table 4.3.4-7), land use fees under Alternative 2 would increase by roughly 125 percent by 2011 in comparison to 1998/99 land fee estimates.

Public Services

Based on projected winter visitation, by the year 2011, increased demand on Crystal Mountain's in-house security department could increase by 92 percent over current conditions under Alternative 2.

Year 2011 winter visitor projections suggest that demand on the Pierce County Sheriff's Office personnel could increase by 92 percent over current conditions under Alternative 2. Given current Sheriff's Office staffing levels at Crystal Mountain (i.e., one patrolman engaged 60-75 percent of working hours), it is expected that one additional county patrolman would be needed during the winter by 2011.

Winter demands on the Washington State Patrol along SR 410 and on the county-maintained Crystal Mountain Boulevard could similarly increase by 92 percent under Alternative 2 by 2011. By 2011, Alternative 2 could sponsor an estimated 7 percent increase in summer demand for State Patrol services on SR 410.

Assuming the incidence of theft continues at the current rate, total theft losses at the ski area on an annual basis could reach roughly \$192,000 under Alternative 2 by 2011. However, proposed mitigation, including additional ski checks and self-locking devices for skis may help to reduce the incidence of equipment theft at Crystal Mountain over the long-term.

Applying skier injury frequency ratios described in Chapter 3 to the skier visit totals projected for the year 2011 yields total annual ambulance transports of approximately 106, and airlift transports of 14, under Alternative 2.

Consequently, the accident rate would increase from 119.3 accidents per year, with 63.2 accidents occurring in the winter ski season to 147 accidents per year with 78 accidents occurring during the ski season (see Section 4.3.5 - Transportation).

Summer traffic totals on SR 410 would likely increase by 7.0 percent under Alternative 2, based on summer visit projections (see Section 4.3.5 - Transportation). Accordingly, increased summer demand on the Greenwater Fire District's emergency services for traffic related accidents could increase by a similar amount, reflecting six additional calls over a 90-day period. Regarding potential increases in summer injury or trauma-related incidences at Crystal Mountain, by the year 2011, one might expect a total of 13 during summer operations under Alternative 2.

⁵² Assumes taxable valuation at 15 percent of total capital costs of all projects, excluding ski trails.

⁵³ These estimates yield tax expenditures in line with appropriate NSAA average tax expenditures as a percentage of resort revenue.

Assuming the accumulation of solid waste continues at current rates, and based on projected visitation, by 2011, annual solid waste production within the Crystal Mountain community would increase by 62 percent under Alternative 2, as compared to Alternative 1 (see Section 4.3.6–Utilities).

4.3.4.5 Impacts – Alternative 3

Alternatives 3 and 5, while representing substantially different improvements in skiing facilities and parking, are anticipated to produce virtually identical social and economic effects. The impacts would be significantly more measurable than those in the No Action Alternative, but a bit less than those experienced in Alternatives 2 and 6.

Population

Potential impacts to population under Alternative 3 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Housing

Under Alternative 3, potential impacts on housing would be similar to those of Alternative 2, although the total increase in housing demand would be slightly less in Alternative 3.

Employment

Under Alternative 3, the East Peak lift and parking structure/garage would not be built, resulting in total development cost estimates (\$93.6 million) slightly lower than those of Alternatives 2 and 6.

As indicated in Tables 4.3.4-3 and 4.3.4-4, both short-term and long-term employment totals under Alternative 3 would be slightly smaller than those of Alternative 2.

Personal Income

Potential impacts to personal income under Alternative 3 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Spending and Economic Characteristics

As previously shown in Table 4.3.4-5, visitor spending under Alternative 3 would be slightly below that of Alternative 2. Similarly, resort expenditures for payroll, taxes, and fees (see Table 4.3.4-7) are slightly lower for Alternative 3 in comparison to Alternative 2.

Public Services

As with the economic characteristics above, increases in demand for public services under Alternative 3 reflect impacts just slightly below those described for Alternative 2. The relative differences in public services demand generally correspond to the relative differences in

projected visitation figures for the alternatives (see Table 4.3.4-7), as demands have been estimated in relation to visitor volume (see Section 4.3.5–Transportation and Section 4.3.6–Utilities). The Summer ADT on SR 410 under Alternative 3 would increase as described under Alternative 2. Under Alternative 3, the impact on accidents along SR 410 would be as described under Alternative 2 (see Section 4.3.5 -Transportation).

4.3.4.6 Impacts – Alternative 4

While Alternative 4 represents a substantial improvement over Alternative 1 in terms of facilities, visitation, visitor spending, and the resultant economic activity, its effects to social and economic factors are substantially less than those projected for the other Action Alternatives.

Population

Potential impacts to population under Alternative 4 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Housing

Under Alternative 4, potential impacts on housing would be as described under Alternative 2, although the overall increase in total housing demand would be less than the other Action Alternatives (see Table 4.3.4-1).

Employment

Alternative 4 improvements differ from Alternative 2 in several significant ways, including: elimination of the East Peak and Silver King lifts; elimination of the Summit Retreat Center and some parking; slight changes in the phasing of some of the common improvements; and, most significantly, elimination of the tram. Also, a parking structure/garage would not be developed under Alternative 4.

Though total development costs of \$73.7 million under Alternative 4 would be substantially lower than those of Alternatives 2, 3, 5, and 6, spending at the local level would be similar, since higher costs associated with the other alternatives apply primarily to lifts, which would be purchased from out-of-state. Accordingly, short-term employment figures for Alternative 4 are somewhat lower but relatively similar to those of the other Action Alternatives, as depicted in Table 4.3.4-3.

Alternative 4 would generate roughly 8 to 12 percent fewer long-term jobs than would the other Action Alternatives (see Table 4.3.4-4).

Personal Income

Potential impacts to personal income under Alternative 4 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Spending and Economic Characteristics

With no Tram, it is expected that summer visitation to Crystal Mountain would be similar to Alternative 1, those some additional use would be attributed to expanded guest accommodations. Of all alternatives, Alternative 4 would be the least economically viable, due largely to the absence of the tram, which diminishes marketability of the project overall and severely limits summer visitation potential and associated revenue. Based on cost per visit generated (see Table 4.3.4-6), Alternative 4 exhibits the greatest need for higher prices.

Visitation and economic activity generated by non-skiers, particularly in the summer season, is much lower for this proposal. The exclusion of the tram from this Action Alternative significantly reduces the appeal of the mountain facilities to non-skiers in all seasons. This relative reduction of appeal to non-skiers results in a corresponding reduction in economic activity at the resort and off-site (see Table 4.3.4-7).

Public Services

Based on projected winter visitation for Alternative 4, by the year 2011, demand on Crystal Mountain's in-house security department could increase by 69 percent over current conditions.

Year 2011 winter visitor projections suggest demand on the Pierce County Sheriff's Office personnel could increase by 69 percent over current conditions. Given Sheriff's Office current staffing levels at Crystal Mountain (i.e., one patrolman engaged 60-75 percent of working hours), it is expected that one additional county patrolman may be needed during the winter by 2011. Winter demands on the Washington State Patrol along SR 410 and on the county-owned Crystal Mountain Boulevard could similarly increase by 69 percent under Alternative 4, by 2011.

Under Alternative 4 (as with Alternative 1), no additional private security staffing requirements would be expected at Crystal Mountain during the summer months, and demand for State Police services on SR 410 would remain within current trends.

Assuming the incidence of theft continues at the current rate, total theft losses at the ski area on an annual basis could reach roughly \$169,000 under Alternative 4 by 2011. However, proposed mitigation, including additional ski checks and self-locking devices for skis may help to reduce the incidence of equipment theft at Crystal Mountain over the long-term.

Applying skier injury frequency ratios described in Chapter 3 to the skier visit totals projected for the year 2011 yields total winter ambulance transports of approximately 97, and airlift transports of 12, under Alternative 4.

Under Alternative 4, the accident rate would increase from 119.3 accidents per year, with 63.2 accidents occurring in the winter ski season, to 135.3 accidents per year with 71.7 accidents occurring during the ski season (see Section 4.3.5 - Transportation).

Summer traffic totals on SR 410 would likely increase by 1.0 percent under Alternative 4, based on summer visit projections (see Section 4.3.5–Transportation). Accordingly, increased summer

demand on the Greenwater Fire District's emergency services for traffic related accidents could increase by a similar amount, reflecting one additional call over a 90-day period. Regarding potential increases in summer injury or trauma-related incidences at Crystal Mountain, by the year 2011, one might expect a total of 4 during summer operations under Alternative 4.

Assuming the accumulation of solid waste continues at current rates, and based on projected visitation, by 2011, annual solid waste production within the Crystal Mountain community would increase by 58 percent under Alternative 4, as compared to Alternative 1 (see Section 4.3.6 Utilities).

4.3.4.7 Impacts – Alternative 5

Alternative 5, while representing substantially different improvements in skiing facilities and parking, is anticipated to produce similar social and economic effects to those estimated for Alternative 3. Potential effects to social and economic factors would be substantially more measurable than those of the No Action Alternative, but somewhat less than those of Alternatives 2 and 6. An exception is the impact on the demand for housing, as described below.

Population

Potential impacts to population under Alternative 5 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Housing

Alternative 5 provides for 58 additional employee housing beds, enough to accommodate roughly 12 percent of the winter job growth and 46 percent of the summer job growth estimated under this alternative. This housing would provide the resort with a somewhat improved basis for employee recruitment and retention for seasonal jobs, but appreciably less than that of Alternatives 2, 3, 4, and 6. Demand for 255 housing units away from the resort is estimated in Alternative 5, due in large part to the lower number of employee housing beds at the resort in comparison to the other Action Alternatives (see Table 4.3.4-1).

Employment

Under Alternative 5, the Morning Glory and Silver King lifts would not be developed. However, construction of a parking structure/garage renders this the second-least expensive proposed Action Alternative at \$91.3 million.

As indicated in Tables 4.3.4-3 and 4.3.4-4, both short-term and long-term employment totals would be slightly smaller than those of Alternatives 2 and 6, and virtually identical to those of Alternative 3.

Personal Income

Potential impacts to personal income under Alternative 5 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Spending and Economic Characteristics

As indicated in Tables 4.3.4-5 and 4.3.4-7, visitor spending and other economic impacts under Alternative 5 are estimated to be slightly less those of Alternative 2, and virtually identical to those of Alternative 3.

Public Services

As with the economic characteristics, demands for public services under Alternative 5 reflect impacts just slightly below those described for Alternative 2, and virtually identical to those of Alternative 3. The relative differences in demands generally correspond to the relative differences in projected visitation figures for the alternatives (see Table 4.3.4-7), as public services impacts have been estimated in relation to visitor volume (see Section 4.3.5–Transportation and Section 4.3.6–Utilities). The projected increase in Summer ADT on SR 410 as a result of Alternative 5 would be as described for Alternative 2. Consequently, the accident rate would increase from 119.3 accidents per year, with 63.2 accidents occurring in the winter ski season, to 145.7 accidents per year with 77.2 accidents occurring during the ski season (see Section 4.3.5 - Transportation).

4.3.4.8 Impacts – Alternative 6

While significantly different in regard to chair lifts and parking facilities, Alternative 6 would likely produce socioeconomic impacts very similar to those of Alternative 2.

Population

Potential impacts to population under Alternative 6 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Housing

Under Alternative 6, the impacts on housing by the year 2011 would be as described under Alternative 2.

Employment

At \$94.1 million, Alternative 6 represents the second most expensive proposal. Though the Silver King and Snorting Elk triple chairs would not be developed under Alternative 6, construction of a detachable lift in Morning Glory bowl and a parking structure/garage would render costs slightly higher than those of Alternative 3, but still below those of Alternative 2 (see Table 4.3.4-2).

As indicated in Tables 4.3.4-3 and 4.3.4-4, the short-term employment totals would be slightly smaller than those of Alternative 2, due to the lower capital expenditures, while long-term employment would be virtually identical to that of Alternative 2.

Personal Income

Potential impacts to personal income under Alternative 6 would be the same as described for all Action Alternatives (see Section 4.3.4.2).

Spending and Economic Characteristics

Spending and economic characteristics projected for Alternative 6 are similar to those of Alternative 2, although during the projection period, Alternative 6 slightly surpasses Alternative 2 in terms of visitor spending and business expenditure estimates (see Table 4.3.4-7). This is the result of variations in proposed project phasing and earlier completion of overnight lodging development.

Of the Action Alternatives, the mix and timing of project implementation of Alternative 6 would likely sponsor the greatest total annual visitation and lowest cost per visit within the 11-year projection period. On this basis, and despite the second-highest total cost, Alternative 6 represents the most economically viable Action Alternative within this time frame. However, beyond the 11-year horizon, Alternative 2 would likely surpass Alternative 6 in profitability, given its ability to comfortably accommodate more guests and growth.

Public Services

As with economic characteristics, increases in demands for public services under Alternative 6 reflect impacts virtually identical to those described for Alternative 2. Small relative differences in demands generally correspond to the relative differences in projected visitation figures for the alternatives (see Table 4.3.4-7), as demands have been estimated in relation to visitor volume (see Section 4.3.5–Transportation and Section 4.3.6–Utilities). The projected increase in Summer ADT on SR 410 as a result of Alternative 6 would be as described for Alternative 2. Consequently, the accident rate would increase from 119.3 accidents per year, with 63.2 accidents occurring in the winter ski season to 141.5 accidents per year with 75 accidents occurring during the ski season (see Section 4.3.5 - Transportation).

4.3.4.9 Cumulative Impacts

Past development and actions that have contributed to the social and economic characteristics of the *project area* are considered under Alternative 1, and include, but are not limited to:

**Table 4.3.4-FEIS1
Cumulative Impacts of Past, Present, and Reasonably Foreseeable Projects on Social
and Economic Factors in the Southern Portion of the SNOQRD**

Project Number and Description	Project Description and Scale	Impacts on Social and Economic Factors
Past Development and Actions in the Southern Portion of the SNOQRD		
1. Upgrades to Mather Memorial Parkway/SR 410.	The upgrades to Mather Memorial Parkway and other access roads within the southern portion of the SNOQRD and eastern portions of MRNP.	Improved roadway conditions have resulted in an enhanced motorist experience along the highway. Increases in traffic volumes along SR 410 have been accounted for in the summer ADT estimates for Alternative 1 (see Section 4.3.5 – Transportation). Increased traffic along the highway would result in a commensurate improvement in tourist-related economic activity.
2. MRNP General Management Plan Implementation	The implementation of the MRNP General Management Plan.	No impacts to social and economic factors are projected.
3. Development of Crystal Mountain	The original development of ski facilities at Crystal Mountain.	The past development of Crystal Mountain has provided the foundation for winter time economic activity along the SR 410 corridor. This foundation would remain the key social and economic driver during the winter time, while summer activity would increase under the Action Alternatives that include a tram.
4. Recreation Developments	Campground, recreation lodging, and Snopark development along SR 410, within MRNP and in the Upper Silver Creek Valley.	Improvements to recreational facilities along the SR 410 corridor would enhance the recreational experience at developed facilities along the roadway. In conjunction with improvements at Crystal Mountain, the social and economic environment would be enhanced.
5. Logging and Mining	Logging and mining activities in the southern portion of the SNOQRD.	With the effective termination of logging on Federal Lands in the SR 410 corridor, logging-related jobs have declined dramatically, resulting in an increased reliance on recreation as an economic driver in the area.
6. Installation of Power Lines	Construction and maintenance of power rights-of-way.	No new impacts to social and economic factors.
7. Construction of Radio and Cell Towers	Radio and cellular communications site development.	No new impacts to social and economic factors.
8. All American Road Designation	The designation of SR 410 as a National All American Road.	Increases in traffic volumes along SR 410 have been accounted for in the summer ADT estimates for Alternative 1 (see Section 4.3.5 – Transportation). Increased traffic along the highway would result in a commensurate improvement in tourist-related economic activity.

Table 4.3.4-FEIS1
Cumulative Impacts of Past, Present, and Reasonably Foreseeable Projects on Social and Economic Factors in the Southern Portion of the SNOQRD

Project Number and Description	Project Description and Scale	Impacts on Social and Economic Factors
9. Chinook Byway	The Chinook Byway marketing efforts of the Enumclaw/Greenwater Chamber of Commerce.	Increases in traffic volumes along SR 410 have been accounted for in the summer ADT estimates for Alternative 1 (see Section 4.3.5 – Transportation). Increased traffic along the highway would result in a commensurate improvement in tourist-related economic activity..
Recent, Current, or Proposed Development Actions in the Southern Portion of the SNOQRD		
10. SR 410 Improvements	Contingent upon funding, portions of the existing road would be reconstructed from within the old road prism. The project has 3 phases and is proposed to occur from 2005 to 2009.	Improved roadway conditions would result in an enhanced motorist experience along the highway. Increases in traffic volumes along SR 410 have been accounted for in the summer ADT estimates for Alternative 1 (see Section 4.3.5 – Transportation). Increased traffic along the highway would result in a commensurate improvement in tourist-related economic activity.
11. The Huckleberry Land Exchange	Overall, 30,110 acres of land were exchanged from Weyerhaeuser to the National Forest System. 805 acres of private land within the Upper White River Watershed became National Forest land as part of the Huckleberry Land Exchange. The lands in the Upper White River Watershed are to be managed as Deer and Elk Winter Range (609 acres), Late Successional Reserve (100 acres), and Mather Memorial Parkway (96 acres)..	The removal of 805 acres of private land from timber rotation has resulted in a nominal decrease in economic potential associated with timber harvest. Designation of 609 acres of this land for deer and elk winter range has provided a benefit to those with concerns over the elk population in the SR 410 corridor, including the MIT.

The Puget Sound region is experiencing a general trend of residential, business, and industrial development spreading to south King County and Pierce County, as well as to north King County and Snohomish County. This is largely a function of current high population densities, higher sale tax rates, and higher property values in central King County. Pierce County and south King County are absorbing much of the development and population growth associated with this growth, and communities such as Bonney Lake, Buckley, and Enumclaw are growing quickly.

Examples of this growth include the new Muckleshoot Amphitheater in Pierce County between Auburn and Enumclaw (off SR 164), which would add recreation-related jobs, income, and social pressures in the area; the employment-based planned community of Cascadia, located between Bonney Lake and Orting, which would occupy 5,000 acres with 10,000 residential homes, schools, a fire station, commercial development, and golf courses; Sky Island, located west of Bonney Lake, planned for 400 housing units; and Fennel Creek Estates, located southwest of Bonney Lake, which is approved for 1,000 housing units.

Other private land development proposals are likely to proceed in response to social and economic influences in the region independent of development plans at Crystal Mountain. However, the broadening of the real estate market associated with development at the resort may sponsor some accelerated increases in property values and private real estate development schedules.

As noted in the Social and Economic section of Chapter 3 (see Section 3.3.4–Social and Economic Factors), demand for residential real estate at Crystal Mountain is strong, and supply is very limited. The Gold Hill Community contains one of only five privately owned potential development land parcels within 15 miles of the resort base area. Build-out of the Gold Hill community (8 additional units) is permitted by zoning, and would appear to be financially feasible regardless of which alternative is chosen for Crystal Mountain. Due to winter access limitations to this site, the few homes that could be developed on this relatively steep 15-acre parcel would likely be vacation homes and would sponsor negligible socioeconomic impacts within the study area.

Approximately 805 acres of private land within the Upper White River Watershed became NFS land as part of the Huckleberry Land Exchange. Overall, 30,110 acres of land were exchanged from Weyerhaeuser to the National Forest System. The NFS lands in the Upper White River Watershed are to be managed as Deer and Elk Winter Habitat, Late-Successional Reserve, and the Mather Memorial Parkway.

Current and projected economic and population growth represents new market demand for Crystal Mountain. The actions proposed in Alternatives 2 through 6 would permit Crystal Mountain to accommodate new demand to varying degrees. Accommodating that demand at Crystal would produce economic benefits to Pierce County, and to a lesser extent King County, through tax collections and both business and personal spending, from the growth which is projected for the region regardless of development plans at Crystal. The Pierce and King Counties would similarly benefit socially by concentrating increased recreation and commercial activity, created by population growth, within the existing developed site at Crystal Mountain, helping to preserve other areas for alternative and/or lighter dispersed uses.

Of the proposed actions, Alternatives 2 and 6 provide the best opportunities for Crystal to accommodate new demand. Aside from the No Action Alternative (which provides no significant improvement in capacity for peak demand periods), Alternative 4 represents the lowest level of improvement overall in this area, as well as the least economically viable Action Alternative on a cost-per-visitor basis and in terms of revenue generation for the proponent.

The combination of regional population growth and implementation of the Action Alternatives would increase traffic flows on SR 410 and potential demand for medical emergency and police response services. General population growth is expected to contribute an additional 1 percent annually to the demand for these services. Winter demand for emergency and police services would remain less than 28 percent of current summer demand. SR 410 projects (Cayuse to Chinook Pass, Cayuse Pass to Deadwood, and Deadwood Creek to North Boundary Bridge)

include road reconstruction within the existing prism that will not increase capacities, therefore, no cumulative effects are analyzed associated with SR 410 improvements.

Increased summer recreation activity at Crystal Mountain under Alternatives 2, 3, 5, and 6 would likely support objectives of the Mt. Rainier National Park GMP, particularly in terms of transportation. As the majority of summer visitors to Crystal Mountain are projected to come from existing and latent demand in the area, development at the resort is likely to reduce some of the demand on nearby recreation facilities, and to concentrate some additional demand in a developed area suitable for larger visitor volumes. Potential use of Crystal Mountain as a staging area for a shuttle service to MRNP would likely sponsor increased summer use of the resort facilities, and also reduce traffic-related impacts in the area between Crystal Mountain and MRNP (see Section 4.3.5–Transportation).

Table 4.3.4-7 summarizes long-term socioeconomic effects estimated to result from each alternative. Projections of visitation, development costs, and related social and economic impacts have been developed for all six alternatives for the year 2011, to allow for comparisons after full build-out for each alternative. Discussions of the impacts are presented in Sections 4.3.4.2 through 4.3.4.8.

Table 4.3.4-7
Estimated Long-term Social and Economic Impacts by Alternative (Estimated for 2011)

	Current Conditions	Alternatives					
		1	2	3	4	5	6
CM Annual Visitation^a (people)							
Skiers	318,500	391,400	563,400	546,800	513,000	537,600	557,900
Non-skiing winter visitors	19,000	23,484	56,340	54,680	30,780	53,760	55,790
Summer visitors	20,000	22,200	128,100	128,100	35,800	129,600	130,000
Total visitors	357,500	437,084	747,840	729,580	579,580	720,960	743,690
Development Costs^b (dollars)							
Spent within impact area	NA	13,841,060	66,235,387	64,135,341	62,250,435	63,783,800	65,128,845
Spent outside of impact area	NA	0	30,846,700	29,514,200	11,414,000	27,545,800	28,925,800
Total Development Costs	NA	13,841,060	97,082,087	93,649,541	73,664,435	91,329,600	94,054,645
Population^c (people)							
Crystal Mountain in-season	85	85	285	285	285	143	190
Enumclaw	10,740	No Impact	New jobs may help sustain 4.5 percent annual growth experienced				
Pierce County	700,000	812,002	812,002	812,002	812,002	812,002	812,002
King County	1,677,000	1,840,172	1,840,172	1,840,172	1,840,172	1,840,172	1,840,172
Housing^d							
Enumclaw							
Total housing units	4,383	No Impact	New jobs may help sustain 4.7 percent annual growth experienced				
Median sales price (dollars)	154,400	No Impact	Increased employment may help sustain recent price increases.				
Average rent/mo. (dollars)	634	No Impact	New jobs may sponsor growth in demand, slight increases in avg.				
Pierce County							
Total housing units	276,496	No Impact	New jobs may help sustain 2.4 percent annual growth experienced				
Median price (dollars)	138,000	No Impact	Increased employment may help sustain recent price increases.				
Average rent/month (dollars)	553	No Impact	New jobs may sponsor growth in demand, slight increases in avg.				
FTE Employment^e (# of jobs)							
From spending at resort:	287	302	505	490	450	490	505
CMI resort operations	180	190	320	310	290	310	320
Other base area businesses	107	112	185	180	160	180	185
From spending off-site:	169	208	391	383	352	380	390
Direct – Pierce County	136	168	316	309	284	306	315
Indirect – Pierce County	13	16	30	30	27	30	30
Induced – Pierce County	20	24	45	44	41	44	45
FTE Employment Total	456	510	896	873	802	870	895
Ski Area Economics^f (000)							
Visitor Spending							
Resort services (dollars)	12,295	15,080	27,660	26,910	23,585	26,975	27,895
Lodging (dollars)	2,525	3,195	6,275	6,265	5,735	6,275	6,325
Non-resort purchases	7,240	8,940	16,800	16,435	15,055	16,245	16,715
Total visitor spending	22,060	27,215	50,735	49,610	44,350	49,465	50,905
Selected Resort Expenses							
Payroll (dollars)	2,790	3,425	6,375	6,200	5,435	6,220	6,430
Payroll taxes (dollars)	635	775	1,895	1,845	1,615	1,850	1,910
Property & other	160	195	385	380	330	380	390
Est. increase in land use fees (percent)	0	23	125	119	92	119	127
Total Resort Expenses	3,590	4,505	8,655	8,420	7,380	8,445	8,730

^a Visitation estimated by Sno.engineering, Inc., based on typical utilization rates for resorts of similar characteristics and geography.

^b Development costs estimated by Sno.engineering and Crystal Mountain, using manufacturers' and suppliers' estimates, Marshall Valuation Service, and Sno.engineering database for comparable construction projects; excludes restoration costs not yet determined. Money spent outside of impact area reflects lift costs.

^c 1998/99 population estimates and 2010 projections by Washington Office of Financial Management (OFM) are provided for reference, not project impacts.

^d Data from OFM (units); DataQuick 1997, 1998 (Enumclaw pricing); WA Center for Real Estate Research (Pierce pricing); Dupree & Scott Apartment Advisors (rent).

^e CM & base area employment estimated by Sno.engineering using CM data; other estimates were derived from Implan Professional Impact Analysis Software.

^f Visitor spending based on *Economic Analysis of United States Ski Areas, 1997/98* (RRC Associates, 1998) 2-year average for region/size resort spending per skier visit (excluding lodging and real estate), and *Oregon Ski Economics, 1990/91 Season* (Parker et al., 1991) percentages for resort, lodging and non-resort spending. All amounts in 1999 dollars. Selected expenses based on 1997/98 NSAA Economic Analysis 2-year average expenses for resort region/size as a percentage of resort revenue; amounts in 1999 dollars.

4.3.4.10 Irreversible and Irretrievable Commitments of Resources

No socio-economic resources are estimated to be irreversibly or irretrievably committed through the implementation of the Action Alternatives. Capital expenditures are expected to be recovered through increased business volumes, and could potentially be recovered, at least partially, in a future sale of the property. Construction and operational employment is expected to be conducted safely and productively. Overall, continued use of the facility as a financially viable commercial recreation and hospitality business enterprise represents a beneficial socioeconomic use of the property.